

Introduction. In response to a recommendation on March 15, 2004 from David Pawlikowski, P.E., Bridge Safety and Evaluation, Connecticut Department of Transportation (CTDOT) to the Town of Killingworth to close Reservoir Road over the Menunketesuck River due to significant deterioration observed during the CTDOT's March 14, 2004 biennial inspection, the Town of Killingworth Board of Selectmen requested _____ to submit a Preliminary Application to the CTDOT Federal Local Bridge Program for the complete replacement of the bridge.

Existing Bridge. Reservoir Road over the Menunketesuck River was built in approximately 1970 and is located in a rural area southwest of the Killingworth Reservoir. Two (2) culvert barrels spanning under the road carry two-way traffic over the river traveling in a generally northeast-southwest direction. The annual average daily traffic (AADT) of Reservoir Road was recorded as 250 vehicles per day in two separate studies performed by _____ by the CT River Estuary Regional Planning Agency in April and May of 2004 respectively. The CTDOT and the Town of Killingworth classifies Reservoir Road as a Rural Local Road. A Site Location Map is attached.

Mr. Stanley C. Juber
Administrator of the Local Bridge Program
Connecticut Department of Transportation
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The bridge consists of two corrugated steel pipe barrels measuring approximately 10'-4" wide by 6'-9" high with crude stone headwalls and truss-like wooden bridge rails. In the early 1980's, bags filled with cement were installed between the barrels at the headwalls to address deterioration in this area. There are no formalized wingwalls or cutoff walls. The backfill material below and above the barrels is assumed to be sand. The barrels have an overall clear span of approximately 24'-5" (including the separating space between the barrels); an overall length of approximately 35'; and a roadway width of approximately 22'-0". There is a bituminous wearing course over the barrels. The bridge rails and approach rails do not meet current AASHTO design standards.

The Menunketesuck River in Killingworth has not been studied by the FEMA. Hydrologic computations performed by this office in 2003 for the 6.29 square mile watershed utilizing USGS Regression Equations (and a straight-line approximation for the 500-year flow from a plot of the remaining flows on log probability paper) resulted in the following flow determinations:

<u>Year</u>	<u>Flow</u>
2	241
10	522
25	716
50	887
100	1,034
500	1,450

The bridge appears to be hydraulically inadequate based on preliminary hydraulic computations performed by this office in 2003 using the Federal Highway Administration Culvert Analysis computer program. These computations reveal that the roadway is overtopped during a 100-year flood event. However, the bridge survived the June 1982 flood event, which river flows were reported by the CTDEP to be on the order of a 200 to 500 year recurrence interval, without overtopping, according to Town representatives. This discrepancy may be due to the broad flat topography upstream of the crossing, which provides stormwater storage.

The latest CTDOT Bridge Inspection Report assigns a condition rating for channel protection, culverts and structure evaluation of 3, 2 and 2 respectively, and a sufficiency rating of 55.91. The CTDOT Fiscal Year 2005 Local Bridge Booklet indicates a slightly different sufficiency rating of 43.37 and a corresponding priority rating of 41.15. The barrels are structurally deficient due to signs of reverse

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curvature in the barrels' shape, section loss/holes in the barrel material resulting in loss of backfill material and undermining present at the inlet and outlet of the barrels. The low condition ratings make the bridge eligible for funding for rehabilitation or replacement.

Proposed Bridge. It is proposed to remove the existing culvert and to replace it with a new bridge designed for HS20 loading. The proposed bridge would consist of a transversely dowel laminated timber superstructure on cast-in-place reinforced concrete abutments and wingwalls on steel piles. Given the size of the contributing watershed, the bridge superstructure is classified as an "Intermediate Structure" by the CTDOT *Drainage Manual*, and should therefore have at least 1' of freeboard over the 100-year discharge. The clear span length would be increased from 24'-0" to 32'-0" (based on preliminary hydraulic computations) with the top of pavement elevations essentially the same as existing. The superstructure would include PL-1 crash-tested bridge rails, a bituminous wearing surface and a membrane waterproofing. The proposed curb-to-curb deck width would remain the same as the existing 22'-0" roadway width. This is based on federal design standards required by AASHTO for the given AADT, road classification and roadway design speed. Approach concrete curbing and metal beam guide rails would be provided at all four corners of the bridge. No other curbing and no sidewalk are proposed.

Conceptual Opinion of Probable Construction Costs. A Conceptual Opinion of Probable Construction Costs for the Replacement of Reservoir Road over the Menunketesuck River has been prepared based on available information and is included herein with a detailed breakdown. This opinion has been prepared prior to the preliminary design of the project. The construction costs shown therein are therefore based on conceptual construction quantities, cost information from vendors and information available from our files on similar projects, adjusted as believed necessary at this time to reflect the construction conditions expected to be encountered. These costs should be interpreted as indicating the order of magnitude of anticipated costs. More definitive costs will be determined during design, and actual costs will be determined as a result of open competitive bidding by qualified contractors after construction contract documents for the project are advertised for bids. Within the qualifications given above, we believe the conceptual opinion of probable construction costs provides a reasonable basis for establishing the Estimated Construction Cost. In addition, an estimate for the Preliminary Engineering Fees and Construction Engineering Cost has been prepared and included herein

The Total Estimated Project Cost, including construction costs, preliminary engineering fees, construction engineering and contingencies amounts to \$873,600. Approximately 80%, or \$698,880

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would be available as a financial grant (Federal Reimbursement) under the Federal Local Bridge Program. The Town of Killingworth would fund the remaining 20%, or \$174,720 out-of-pocket.

Total Estimated Project Cost	\$ 873,600.00
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Financial Aid Data:

Federal Reimbursement: *(Limited to qualifying bridges - See Appendix I)*
Total Estimated Project Cost multiplied by 80%:

Project Reimbursement Request \$ 698,880.00

State Local Bridge Project Grant: *(Cannot be combined with Federal reimbursement)*

Allowable Grant Percentage 0 % of Total Cost.

Project Grant Request \$ 0

State Local Bridge Project Loan: *(Maximum 50% of total project cost)*

Project Loan Request \$ 0

Schedule: (Anticipated Dates)

Public Hearing Conducted: 10/01/2005

Design Completion: 09/01/2006

Property Acquisition Completion: 10/01/2006

Utilities Coordination Completion: 10/01/2006

Construction Advertising: 01/15/2007

Supplemental Application Submission: N/A

Start of Construction: 04/01/2007

Completion of Construction: 12/30/2007

I hereby certify that the above is accurate and true, to the best of my knowledge and belief.

Signature: 
(Chief Elected Official, Town Manager, or other Officer Duly Authorized)

Date: 05/14/2004

Return completed applications to: Mr. Stanley C. Juber
Administrator of the Local Bridge Program
Connecticut Department of Transportation
2800 Berlin Turnpike, P.O. Box 317546
Newington, Connecticut 06131-7546

Bridge No. 04716

KILLINGWORTH

RESERVOIR ROAD OVER MENUNKETESUCK RIVER

CORRUGATED PIPE ARCH

ROUTINE + SPECIAL INSPECTION

3/15/04

PREPARED BY: D.P., M.L. AND M.G.

TEAM 7

REVIEWED: DAVID PAWLICOWSKI DATE: 3-16-04

CT PERM 20897

REC'D
3-22-04

Structure No.	04716	Town	KILLINGWORTH
Inspection Date	3/15/2004	Inspectors	Team 7

TABLE OF CONTENTS

Loose Forms (not bound in report)

	Number of Sheets Enclosed
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Plan Sheets	0
Already on file <input type="checkbox"/>	

Bound Report Pages

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Load Rating Evaluation	0
Quantities & Cost Estimate	0
Photo Sheets	4
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Forms

BRI-18, Bridge Inspection Form	4
BRI-19, Highway Bridge Inventory Form	2

Comments:

Connecticut Department of Transportation
Bridge Inspection Report BRI-18

BRIDGE #: 04716

INSPECTION DATE:

3/15/2004

INSPECTION TYPE: Routine

PREVIOUS INSPECTION DATE: 4/3/2003

SNOOPER REQUIRED: No

INSPECTION PERFORMED BY: Team 7

SNOOPER USED: No

TOWN: KILLINGWORTH

FEATURE CARRIED: RESERVOIR ROAD

YEAR BUILT: 1970

LOCATION: .5MI N ROAST MEAT HILL R

FEATURE INTERSECTED: MENUNKETESUCK RIVER

YEAR REBUILT: 0

MAIN MATERIAL: Steel

MAIN DESIGN: Culvert (includes frame culv

INSPECTION VISITS:

Inspection Date: 3/15/2004

Start Time: 12:45 PM

Temperature: ° F

End Time: 3:10 PM

Inspection Date: 3/16/2004

Start Time: 8:30 AM

Temperature: ° F

End Time: 9:30 AM

INSPECTORS:

Inspector: D. Pawlikowsk

Task: ON SITE 3/16/04 ONLY

Inspector: M. Long

Task:

Inspector: M. Glynn

Task:

58. DECK

OVERALL RATING P

RATING

OVERLAY N - APPROXIMATELY 18 IN. +/- BALLAST COVER.

DECK STR. CONDITION N

CURBS N

MEDIAN N

SIDEWALKS N

PARAPET N

RAILING 7 - PRESSURE TREATED 4 IN. X 6 IN. RAILS AND POSTS
MINOR SPLITS AND GENERAL WEATHERING.
(1) DIAGONAL BRACE LOOSE AT EAST SIDE.

PAINT N

FENCE N

DRAINS N

LIGHTING STANDARD N

UTILITIES TYPE/SIZE N

CONSTRUCTION JOINTS N

EXPANSION JOINTS N

59. SUPERSTRUCTURE

OVERALL RATING N

60. SUBSTRUCTURE

OVERALL RATING N

61. CHANNEL PROTECTION

OVERALL RATING 3

RATING

CHANNEL SCOUR 3 - UNDERMINING AT OUTLET AND INLET OF PIPES. A RULER
CAN BE INSERTED UP TO 14 IN. +/- AT BOTH ENDS OF CELL
#1 AND UP TO 27 IN. AT INLET END OF CELL #2. THERE IS EVIDENCE OF PIPING.

EMBANKMENT EROSION 6 - SOME UNDERCUTTING UP STREAM.

DEBRIS 5 INLET - DEADWOOD, BRUSH, LIMBS LAYING ALONG

Connecticut Department of Transportation

Bridge Inspection Report BRI-18

BRIDGE #: 04716

INSPECTION DATE:

3/15/2004

61. CHANNEL PROTECTION

OVERALL RATING 3

EMBANKMENTS.

VEGETATION 7

- MINOR BRUSH GROWTH ESPECIALLY AT WEST END (INLET).

CHANNEL CHANGE 7

- MINOR EMBANKMENT ENCROACHMENT AT INLET.

- UP AND DOWN STREAM ALIGNMENT IS FAIR.

FENDER SYSTEM N

SPUR DIKES & JETTIES N

RIP RAP 8

62. CULVERTS & RETAINING WALL

SPAN LENGTH - 10 FT. 3 IN.

RISE - 6 FT. 9 IN.

CORRUGATION SIZE - 6 IN. X 2 IN. X 8 GA.

OVERALL RATING 2

RATING

BARREL

CONCRETE N

STEEL 2

- SHAPE IS GENERALLY FAIR WITH A SMOOTH CURVATURE ALONG TOP OF ARCH. HOWEVER BOTTOM PLATES SHOW SIGNS OF SLIGHT REVERSE CURVATURE. HORIZONTAL SPAN LESS THAN 3% GREATER THAN DESIGN.

- SPOTTY LIGHT TO MODERATE RUST ALONG TOP PLATES.

- CORNER AND BOTTOM PLATES SHOW SEVERE SECTION LOSS WITH EXTENSIVE PERFORATION HOLES THROUGHOUT AT AND BELOW WATERLINE.

- AT PERFORATION HOLES HAS EXPOSED FILL. IN THESE AREAS A RULER CAN BE PROBED 5 IN. PLUS.

- THE CORNER AND BOTTOM PLATES IN BOTH CELLS SHOW SIGNS OF SLIGHT REVERSE CURVATURE.

- AREAS WHERE HOLES EXIST WATER MOVEMENT IS CAUSING LOSS OF BACKFILL MATERIAL THROUGH PERFORATIONS.

- IN AREAS WHERE HOLES ARE NOT YET PRESENT 1/16 IN. OR LESS REMAINS (ORIGINAL THICKNESS 8 GAUGE).

- UNDERMINING AT OUTLET AND INLET OF PIPES. A RULER CAN BE INSERTED UP TO 14 IN. +/- AT BOTH ENDS OF CELL #1 AND UP TO 27 IN. AT INLET END OF CELL #2. THERE IS EVIDENCE OF PIPING.

- WATER DEPTH IN PIPES UP TO 12 IN.

TIMBER N

HEADWALL 7

CONCRETE BAGS AT INLET - SMALL VOID AREAS.

- AT WATERLINE THE BAGS ARE BECOMING PUNKY WITH AREAS OF SEVERE SCALE AREAS.

- STONE VOIDS AT OUTLET WITH BACKFILL MATERIAL VISIBLE.

CUTOFF WALL N

DEBRIS 5

INLET END (WEST) - CORRUGATED PLASTIC PIPE (BEAVER DETERRENT DEVICE) REMOVED.

- BEAVER DAM REMNANTS IN FRONT OF CELL #2, IMPEDING FLOW THROUGH PIPE.

- SOME STONES IN PIPES.

RETAINING WALL STEM N

FOOTING N

Connecticut Department of Transportation

Bridge Inspection Report BRI-18

BRIDGE #: 04716

INSPECTION DATE:

3/15/2004

APPROACH CONDITION

OVERALL RATING

7

RATING

APPROACH SLAB N

RELIEF JOINTS N

APPROACH GUIDE RAIL N

APPROACH PAVEMENT 7

BITUMINOUS CONCRETE - TRANSVERSE CRACKS (1) OF
WHICH IS OVER CELL #2.
- MINOR DEPRESSION AREAS AT NORTHEAST
CORNER.

APPROACH EMBANKMENT 8

TRAFFIC SAFETY FEATURES:

BRIDGE RAILINGS N

TRANSITIONS N

APPROACH GUARDRAILS N

APPR. GUARDRAIL ENDS N

LOAD POSTING

SINGLE UNIT (TONS)

HS (TONS)

4 AXLE (TONS)

3S2 (TONS)

ADVANCE WARNING Y/N

LEGIBILITY

VISIBILITY/LOCATION

MISC.

MIN VERT. UNDERCLR.

0' 0"

POSTED CLR. UNDER BRIDGE

' "

POSTED CLR. ON BRIDGE

' "

ADVANCE WARNING (Y/N)

No

SPEED LIMIT (IF ANY)

MPH

CHARACTER OF TRAFFIC

- LIGHT VOLUME, MIXED WEIGHTS

ADDITIONAL NOTES

- INVENTORY DIRECTION SOUTH TO NORTH.

ADDITIONAL COMMENTS:

DUE TO CONDITION OF STRUCTURE A MEETING WITH J. HOWARD PFROMMER (CONSULTANT TOWN ENGINEER)
PHONE NUMBER (860) 526-9591 AND TOWN FOREMAN JIM WARD PHONE NUMBER (860) 663-0875 WAS ARRANGED.
IT WAS RECOMMENDED BY DAVE PAWLIKOWSKI (DOT BRIDGE SAFETY) THE STRUCTURE BE CLOSED.

Connecticut Department of Transportation
Bridge Inspection Report BRI-18

BRIDGE #: 04716

INSPECTION DATE:

3/15/2004


Inspectors' Signatures:

1)



Date: 3/16/04

2)



Date: 03/15/04

3)



Date: 3/15/04

4)

Date: ___/___/___

P.E. Signature:



Date: 3/16/04

P.E.#:

20897

Reviewed by:



CDOT

Date: 3/16/04

Rev
3.29.04

Structure Inventory and Appraisal Sheet (English Units)

Bridge Key: 04716

Agency ID: 04716

Sufficiency Rating: 100.0

IDENTIFICATION

State 1: 09 Connecticut Struc Num 8: 04716
 Facility Carried 7: RESERVOIR ROAD Location 9: .5MI N ROAST MEAT HILL RD
 Rte.(On/Under)5A: Route On Structure Rte. Signing Prefix 5B: 5 City Street
 Level of Service 5C: 0 None of the below Rte. Number 5D: 00000
 Directional Suffix 5E: 0 N/A (NBI) % Responsibility : 0
 SHD District 2: 02 County Code 3: Middlesex
 Place Code 4: KILLINGWORTH Mile Post 11: 0.430 mi
 Feature Intersected 6: MENUNKETESUCK RIVER
 Latitude 16: 41d 21' 48" Longitude 17: 072d 32' 30"
 Border Bridge Code 98: Unknown (P)
 Border Bridge Number 99: NA

INSPECTION

Frequency 91: 24 months Inspection Date 90: 3/15/2004 Next Inspection: 03/15/2006
 FC Frequency 92A: NA FC Inspection Date 93A: NA Next FC Inspection: NA
 UW Frequency 92B: NA UW Inspection Date 93B: NA Next UW Inspection: NA
 SI Frequency 92C: NA SI Date 93C: NA Next SI: NA
 Element Frequency: 24 months Element Inspection Date: 03/15/2004 Next Elem. Insp. Due: 03/15/2006

CLASSIFICATION

Defense Highway 100: 0 Not a STRA+NET hwy Parallel Structure 101: No || bridge exists
 Direction of Traffic 102: 2 2-way traffic Temporary Structure 103: Unknown (NBI)
 Highway System 104: 0 Not on NHS NBIS Length 112: Long Enough
 Toll Facility 20: 3 On free road Functional Class 26: 09 Rural Local
 Historical Significance 37: 5 Not eligible for NRHP
 Owner 22: 3 Town/Township Hwy Agency
 Custodian 21: 3 Town/Township Hwy Agency

STRUCTURE TYPE AND MATERIALS

Number of Approach Spans 46: 0 Number of Spans Main Unit 45: 2
 Main Span Material/Design 43A/B:
 3 Steel 19 Culvert

Deck Type 107: N N/A (NBI)
 Wearing Surface 108A: N N/A (no deck (NBI))
 Membrane 108B: N N/A (no deck (NBI))
 Deck Protection 108C: N N/A (no deck (NBI))

CONDITION

Deck 58: N N/A (NBI) Super 59: N N/A (NBI) Sub 60: N N/A (NBI)
 Culvert 62: 2 Severe Settlement Channel/Channel Protection 61: 3 Bank Prot Failed

AGE AND SERVICE

Year Built 27: 1970 Year Reconstructed 106: Unknown
 Type of Service on 42A: 1 Highway
 Type of Service under 42B: 5 Waterway
 Lanes on 28A: 2 Lanes Under 28B: 0 Detour Length 19: 6.2 mi
 ADT 29: 100 Truck ADT 109: 7 % Year of ADT 30: 1993

LOAD RATING AND POSTING

Inventory Rating Method 65: 1 LF Load Factor Operating Rating Method 63: 1 LF Load Factor
 Inventory Rating 66: HS15.4 Operating Rating 64: HS25.4
 Design Load 31: Unknown (NBI) Posting 70: 5 At/Above Legal Loads
 Posting status 41: A Open, no restriction

APPRAISAL

Bridge Rail 38A: N N/A or not required Approach Rail 38C: N N/A or not required
 Transition 36B: N N/A or not required Approach Rail Ends 36D: N N/A or not required
 Str. Evaluation 67: 6 Deck Geometry 68: N Not applicable (NBI)
 Underclearance, Vertical and Horizontal 69: N Not applicable (NBI)
 Waterway Adequacy 71: 7 Above Minimum Approach Alignment 72: 8 Equal Desirable Crit
 Scour Critical 113: 8 Stable Above Footing

GEOMETRIC DATA

Length Max Span 48: 9.8 ft Structure Length 49: 24.0 ft
 Curb/Sdwk Width L 50A: 0.0 ft Curb/Sidewalk Width R 50B: 0.0 ft
 Width Curb to Curb 51: 0.0 ft Width Out to Out 52: 0.0 ft
 Approach Roadway Width 32: 21.0 ft Median 33: 0 No median (w/ shoulders)
 Deck Area: . sq. ft
 Skew 34: 11.00° Structure Flared 35: 0 No flare
 Minimum Vertical Clearance Over Bridge 53: 328.1 ft
 Minimum Vertical Underclearance Reference 54A: N Feature not hwy or RR
 Minimum Vertical Underclearance 54B: 0.0 ft
 Minimum Lateral Underclearance Reference R 55A: N Feature not hwy or RR
 Minimum Lateral Underclearance R 55: 327.8 ft
 Minimum Lateral Underclearance L 56: 0.0 ft

PROPOSED IMPROVEMENTS

Bridge Cost 94: \$ 1,000 Type of Work 75: 38 Other Structural
 Roadway Cost 95: \$ 1,000 Length of Improvement 76: 0.3 ft
 Total Cost 96: \$ 2,000 Future ADT 114: 50
 Year of Cost Estimate 97: 2000 Year of Future ADT 115: 2019

NAVIGATION DATA

Navigation Control 38: 0 Permit Not Required
 Vertical Clearance 39: 0.0 ft Horizontal Clearance 40: 0.0 ft
 Pier Protection 111: Unknown (NBI) Lift Bridge Vertical Clearance 116:

ELEMENT CONDITION STATE DATA

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
UNIT0	240/3	Steel Culvert	(LF)	89	0 %	0	0 %	0	0 %	0	100 %	89	0 %	0
UNIT0	332/3	Timb Bridge Railing	(LF)	49	100 %	49	0 %	0	0 %	0	0 %	0	0 %	0

Bridge Number **04716**

Inspected By: _____ & _____

Sufficiency Rating **40.85**
Previous Inspection Date **3/15/04**

BS&E Received ☐ Data Entry By: SL
Copies Made ☐ Data Entry Date: 4/28/04

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
BRIDGE SAFETY & EVALUATION

STRUCTURE EVALUATION

SHEET 1 OF 2 FORM BRI-19, REV 10/00

SHEET _____ OF _____ (INSP. REPORT)

IDENTIFICATION

Bridge Name **KILLINGWORTH** Town Code **40710**
5) Inventory Route:
A) Record Type **1** B) Signing Prefix **5** City Street
C) Level of Service **0** None of the bel
6) Feature Intersected **MENUNKETESUCK RIVER**
7) Facility Carried **RESERVOIR ROAD**
9) Location **.5MI N ROAST MEAT HILL RD**
11) Milepoint **0.00** Mile
16) Latitude **41 deg 21 min .48 sec**
17) Longitude **72 deg 32 min 30.00 sec**
98) Border Bridge:
A) State Code **0000** B) Percent Responsibility **00**%
C) Border Town Name
99) Border Bridge Structure No

STRUCTURE TYPE AND MATERIAL

43) Structure Type, Main:
A) Material **3** Steel B) Design Type **19** Culvert (includes fra
44) Structure Type, Approach:
A) Material **0** Other B) Design Type **0** Other
45) Number of Spans, Main Unit **2**
46) Number of Approach Spans **0**
107) Deck Structure Type **N** Not Applicable
108) Wearing Surface/Protective System:
A) Type of Wearing Surface **N** Not Applicable
B) Type of Membrane **N** Not Applicable
C) Type of Deck Protection **N** Not Applicable

90) Inspection Date	Inspection Team	91) Frequency	Class
2/10/98	7	6	01
Indepth Insp	Deck Survey	Access	Flagman
2/10/98		0	0

CRITICAL FEATURE INSPECTIONS			
Type	Frequency	Team	Date
Fracture:			
Uwater:			
Special: Z	6	7	3/15/04

RED FLAG

AGE AND SERVICE

27) Year Built **1970** 106) Year Reconstructed **0000**
42) Type of Service:
A) On **1** Highway B) Under **5** WATERWAY
28) Number of Lanes:
A) On **2** B) Under **0**
29) Average Daily Traffic **100** Half ADT?: **No**
109) Percent Truck **7**%
30) Year of ADT **1993**
19) Bypass, Detour Length **6** miles

GEOMETRIC DATA

48) Length of Max Span **10** ft
49) Structure Length **24** ft
50) Curb or Sidewalk Widths:
A) Left **0.0** ft B) Right **0.0** ft
51) Brg Rdwy width, curb-curb **0.0** ft
52) Deck Width, Out-Out **0.0** ft
32) Approach Roadway Width **21** ft
33) Bridge Median **0** No Median
Deck Area **721** sqft
34) Skew Angle **11** deg
35) Structure Flared **0**
10) Inv. Rte. Min. Vert Clearance **99** ft **99** in
47) Log Inv. Rte. Total Horiz Clr.: **21.0** ft
47) RLog Inv. Rte. Total Horiz. Clr.: **ft**
53) Min Vert Clearance Over Bridge **99** ft **99** in
54) Min Vert Under Clearance **N** Ref **0** ft **0** in
55) Min Lat Under Clearance on Right **N** Ref **99.9** ft
56) Min Lat Under Clearance on Left **0.0** ft

BRIDGE COMMENTS

CRITICAL INSPECTION: CHECK PIPE SHAPE & SECTION LOSS.

CLASSIFICATION	
112) NBIS Bridge Length	Yes
104) Highway System	0 Off System
26) Functional Class	9 Rural Local
100) Defense Highway	0 Not Defense Highway
101) Parallel Structure	N No parallel structure exists
102) Direction of Traffic	2 2-way traffic
103) Temporary Structure	
110) Designated National Network	0 Not on national network
20) Toll	3 On Free Road
21) Maintain	3 Town or Township Highway Agency
22) Owner	3 Town or Township Highway Agency
Report Class	L LOCAL
37) Historical Significance	5 Bridge is not eligible for National Register

WATERWAY	
DrainageBasinCode	5103
38) Navigation Control	0 No navigation control on waterway
39) Navigation Vert Clr.	0
40) Navigation Horiz Clr.	0
116) Vert-Lift Brg Nav Min	
111) Pier Abutment Protection	

PROPOSED IMPROVEMENTS	
75A) Type of Work Proposed	
75B) Work Done By	
76) Length of Struct. Improvement	ft
94) Bridge Improvement Cost	\$
95) Roadway Improvement Cost	\$
96) Total Project Cost	\$
97) Year of Improvement Cost Est.	
114) Future ADT	
115) Year Future ADT	
List No.	
Project No.	
Advised	

POSTED SIGNS & UTILITIES	
Other Posted Signs 1	0
Other Posted Signs 2	0
Actual P.L. Single Unit Truck	tons
Rec. P.L. Single Unit Truck	tons
Actual P.L. Semi-Trailer Truck	tons
Rec. P.L. Semi-Trailer Truck	tons
Rec. P.L. All Vehicles	tons
Posted Vert Clearance On Bridge	ft in
Posted Vert Under Clearance	ft in
Posted Speed Limit	mph
Utility	

STRUCTURE EVALUATION

SHEET 2 OF 2 FORM BRI-19 REV 10/00

SHEET ____ OF ____ (INSP. REPORT)

Inspected By: _____ & _____

Bridge Number	04716	NBIS Length	
Town Name	KILLINGWORTH	Yes	24
Facility Carried	RESERVOIR ROAD		
Feature Crossed	MENUNKETESUCK RIVER		

LOAD RATING AND POSTING	
31) Design Load	0
63) Operating Rating Type	1
64) Operating Rating	46.0
65) Inventory Rating Type	1
66) Inventory Rating	28.0
Evaluation Code	L
Year of Evaluation	2000
70) Bridge Posting	5
41) Structure Status	A
Open, no restriction	

CONDITION		APPRAISALS	
Rating	By	Rating	By
N		67) Structure Evaluation	2
N		68) Deck Geometry	N
N		69) Under Clear Vert & Horiz	N
3		71) Waterway Adequacy	7
2		72) Approach Rdwy Alignment	8
		113) Scour Critical	8

Items 58 Thru 72 Checked By: _____

36) Traffic Safety Features:

A) Bridge Railings	N
B) Transitions	N
C) Approach Guardrail	N
D) Approach Guardrail End	N

OTHER FEATURES

Fence Required	No	Barrel Ladder	No
Fence Present	No	Stand Pipes	No
Fence Height	0.0 ft	Cat Walks	No
Fence Type		Movable Inspection System	No
Fence Material		Loose Concrete Checked?	No
Fence Top Type			

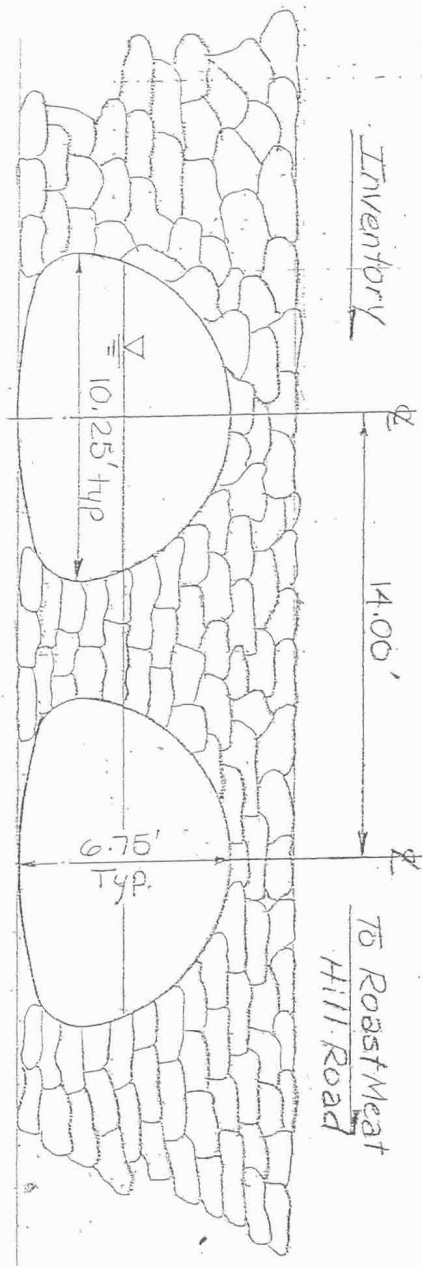
INSPECTION COMMENTS	
Proposed Next Indepth Insp Year	2008
Senior	anninorp
Supervisor	kozlowskijc

REVIEWED BY _____ Date 4-26-04

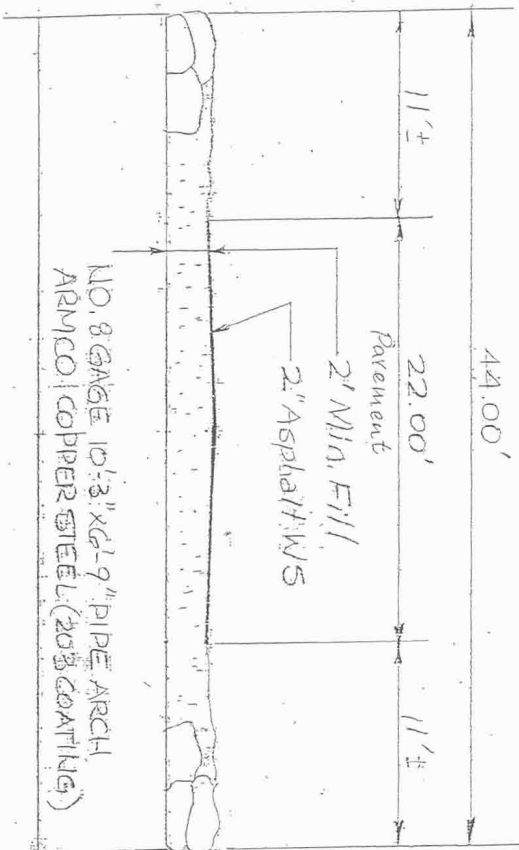
Bridge No.	04716	Inspected by:	MIKE LONG
Town:	KILLINGWORTH	Inspected by:	MIKE GLYNN
Feature Carried:	RESERVIOR ROAD	Date Inspected:	04/21/04
Feature Crossed:	MENUNKETESUCK RIVER	Project No.:	



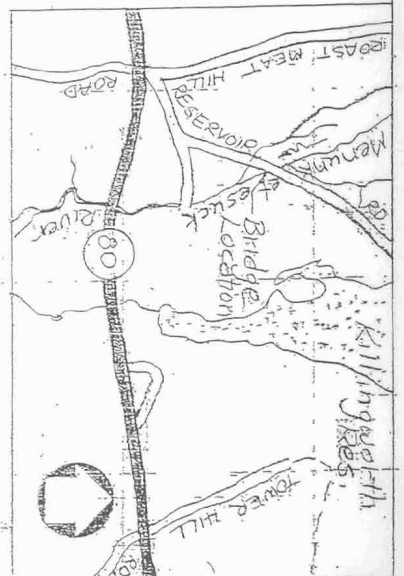
PHOTO # 1 POSTED AT BOTH APPROACHES WITH NO ADVANCE WARNING.



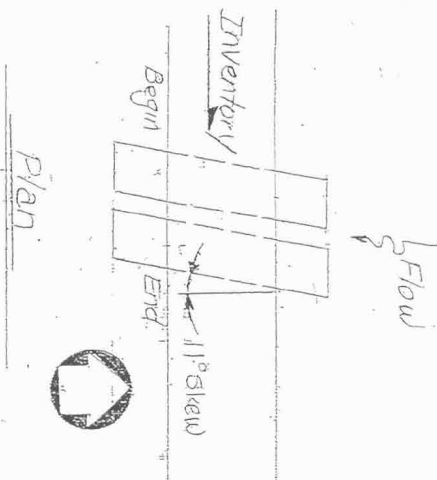
ELEVATION



CROSS SECTION



LOCATION PLAN



Plan

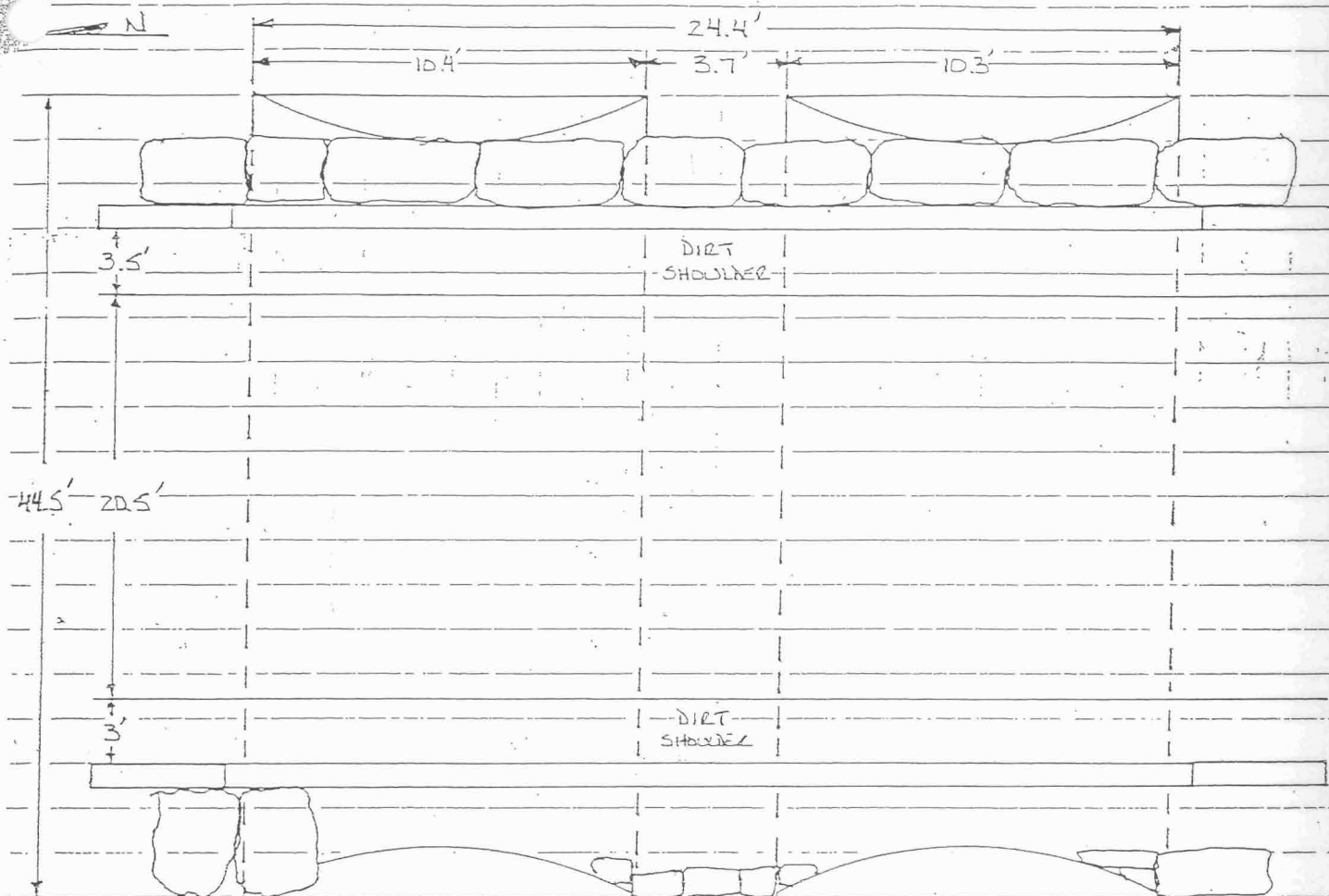
CONN. DEPT. OF TRANSPORTATION	KILLDEER RIVER
RESERVOIR ROAD	RESERVOIR ROAD
MEMPHIS, TENN.	MEMPHIS, TENN.
DATE 8-16-80	DATE 8-16-80
CDOT BR. NO. 047	CDOT BR. NO. 047

SHEET NO. 5 of 12

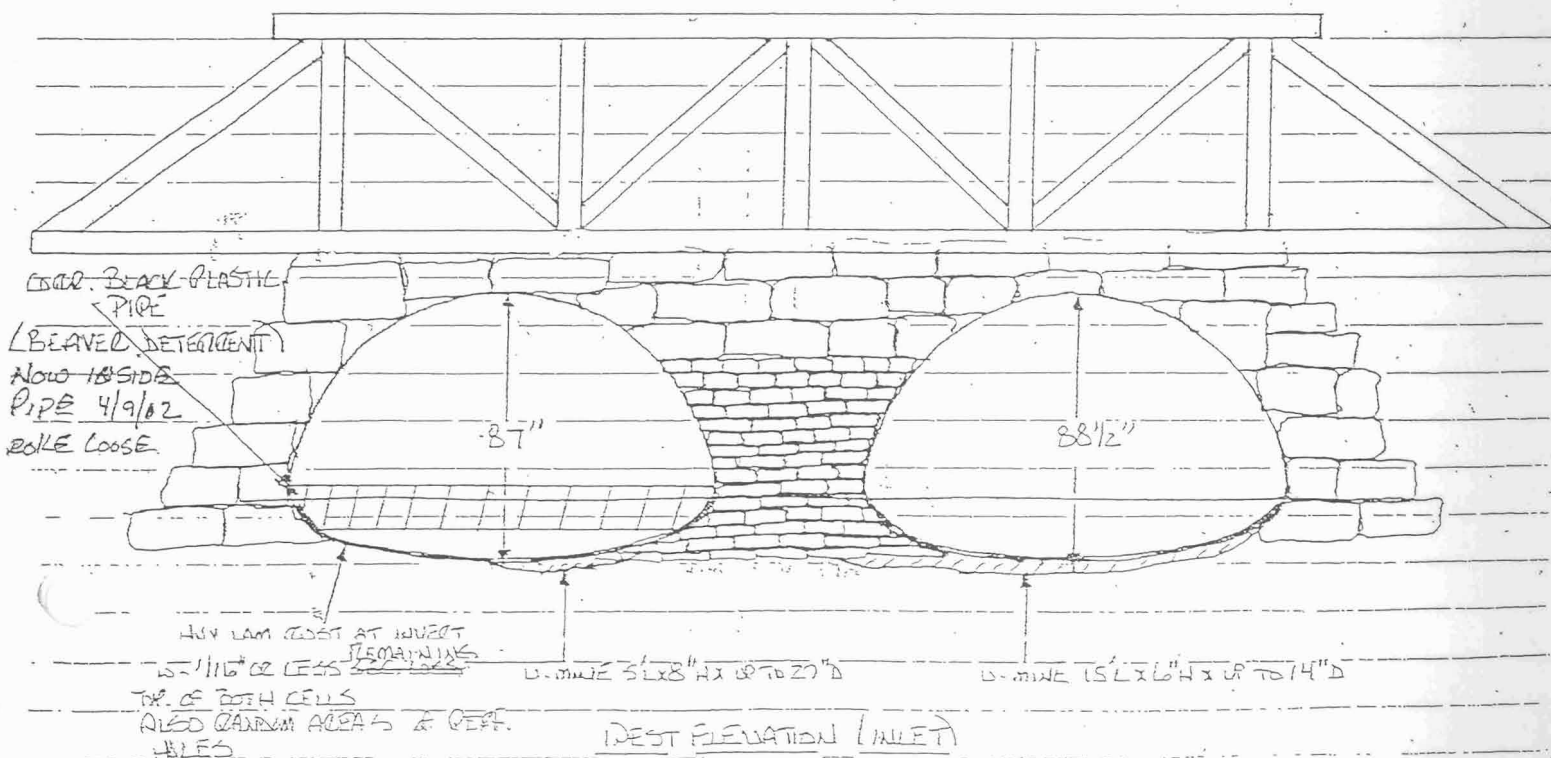
PREPARED BY
ALEA 7
CHECKED BY

SUBJECT:

BY NA 04716 LIVINGWORTH, RESERVOIR, RD. (d) MENDOCUTSUCK RIVER



PLAN VIEW



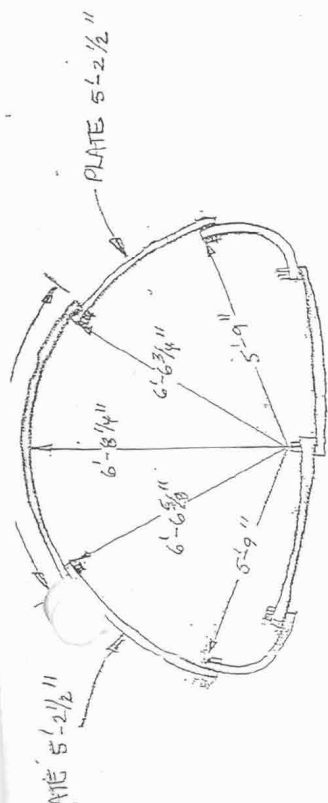


PLATE THICKNESS = $\frac{9}{16}$ " (10 GAGE)
 BOLTS ARE ARMO 3/4" GALVANIZED BOLTS.
 PLATES ARE STAMPED:

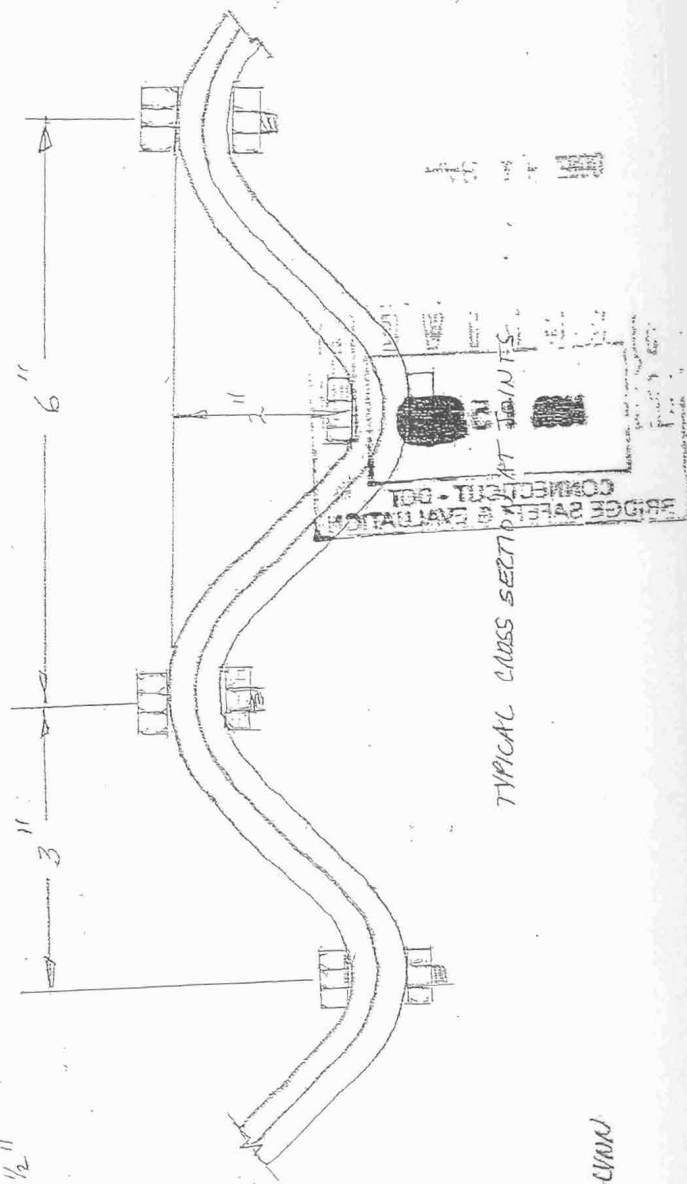
MULTI. PLATE
 TOPPED STEEL CS
 ARMO STEEL CORROSION

THERE IS ALSO A NUMBER IMBOSSED
 INTO THE PLATES, THE NUMBER IS
 0218062

* SPAN = (MEASURED THREE LOCATIONS 10'-1", 10'-3", 10'-1 1/2")

* RISE = 6'-8"

* SEE THE MONITORING MEASUREMENTS W/REPORT
 FOR ADDITIONAL MEASUREMENTS.



BR. NO. 4716
 RESERVOIR ROAD OVER MENDOTA RIVER
 KILLING WORTH.
 PREPARED BY: RONALD ANNINO, MILES LONG & MIKE GUNN
 DATE PREPARED 3/7/81